The Broken Machine: The US Army Division in the Age of Brigade Modularity

A Monograph

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Would the modern US Army division succeed in a large-scale conventional engagement (decisive action)? The US Army division in World War II is a benchmark for comparison since it was a highly successful combat organization used against the last peer competitors that the United States faced in a major war. In the spirit of Taylorism, the Army designed the division to be a machine—engineered for a purpose, mass-produced, and with interchangeable components—that could be employed by corps and army commanders against the enemy. When evaluating the modern division through the criteria of doctrine, organization, and training, form no longer follows function. The transition to modularity in the early 2000s shifted the primary element of combat power at the tactical level from the division to the brigade combat team, leaving the role of the division ambiguous. The division holds the position once held by the corps, but doctrine continues to ask the division to act in its pre-modularity role without providing an answer for how this is possible without the required force structure. While the Army once depended on the Command and General Staff College to train officers to work on division staffs, the curriculum has shifted to preparing officers to work at the BCT-level. The Mission Command Training Program, the only remaining training program for division staffs, is then forced to provide training and assistance in basic staff organization and administration, rather than provide a capstone training event in division warfighting against a thinking enemy as intended.

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Abstract

The Broken Machine: The US Army Division in the Age of Brigade Modularity, by MAJ James P. Kane Jr., US Army, 46 pages.

Would the modern US Army division succeed in a large-scale conventional engagement (decisive action)? The US Army division in World War II is a benchmark for comparison since it was a highly successful combat organization used against the last peer competitors that the United States faced in a major war. The division structure of World War II is particularly appropriate for comparison because the Army in the interwar period undertook a focused effort to understand the requirements of large-scale modern combat and then designed the division to fulfil these requirements. In the spirit of Taylorism, the Army designed the division to be a machine— engineered for a purpose, mass-produced, with interchangeable components—that could be employed by corps and army commanders against the enemy.

When evaluating the modern division through the criteria of doctrine, organization, and training, form no longer follows function. The transition to modularity in the early 2000s shifted the primary element of combat power at the tactical level from the division to the brigade combat team, leaving the role of the division ambiguous. The division holds the position once held by the corps, but doctrine continues to ask the division to act in its pre-modularity role without providing an answer for how this is possible, given inadequate force structure. The confusion over the role and the structure of the division is exacerbated by a gap in training for division staff and leaders. While the Army once depended on the Command and General Staff College to train officers to work on division staffs, the curriculum has shifted to preparing officers to work at BCT-level. The Mission Command Training Program, the only remaining training program for division staffs, is then forced to provide training and assistance in basic staff organization and administration, rather than provide a capstone training event in division warfighting against a thinking enemy as intended.

This monograph provides several recommendations for the Army to fix the broken machine that is the modern division. Some of these recommendations can be undertaken immediately, with no cost to the Army other than the labor required to update doctrine to clarify the role of the division echelon and provide specific guidance for how various staff systems should operate. Other recommendations would require more significant resources, such as changes to staff structure and the creation of division staff courses structured like those the Air Force requires for personnel assigned to work in air operations centers.

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Acknowledgement

Acronyms

ABCT	Armored Brigade Combat Team
ADP	Army Doctrine Publication
ADRP	Army Doctrine Reference Publication
AR	Army Regulation
ARFOR	Army Force (The Army service component of a Joint Force)
ATLDP	Army Training and Leadership Development Panel
ATP	Army Techniques Publication
BCT	Brigade Combat Team
BFSB	Battlefield Surveillance Brigade
CAI	Cubic Applications, Inc.
CGSC	Command and General Staff College
CGSOC	Command and General Staff Officers' Course
DIVARTY	Division Artillery
DPICM	Dual-Purpose Improved Conventional Munitions
FAB	Field Artillery Brigade
FM	Field Manual
IBCT	Infantry Brigade Combat Team
JFLCC	Joint Forces Land Component Command
JTF	Joint Task Force
MCTP	Mission Command Training Program
MEB	Maneuver Enhancement Brigade
SBCT	Stryker Brigade Combat Team
SOP	Standing Operating Procedure (1942); Standard Operating Procedure (Current)
RAP	Rocket-Assisted Projectile

Illustrations

Introduction

In the pre-dawn darkness of 7 August 1944, the lead elements of the German LXVII Panzer Corps smashed through American lines in the vicinity of Mortain, France. The German counterattack, aimed at the Atlantic coast near Avranches, meant to separate the US First and Third Armies. If successful, General George S. Patton's Third Army would have its lines of communications severed and would be trapped in Brittany.[1] The thrust caught the divisions of US VII Corps flat-footed, and made initial penetrations in the area of the American 30th Division, which held high ground to the north and east of Mortain.[2]

The divisions of VII Corps reacted immediately to organize against the attack and halt the German penetration. Regiments and battalions were quickly reassigned under fire to execute a hasty defense. The 30th Division gained infantry regiments from the nearby 9th and 4th Divisions, as well as Combat Command B of the 3rd Armored Division. At the same time, more distant units of the 30th Division came under the control of the 2nd Armored Division and the 35th Division, which were counterattacking the Germans from the south.[3]

Its battalions surrounded but holding key terrain to the north and east of Mortain, the 30th Division held fast against the efforts of four elite panzer divisions while neighboring American divisions maneuvered to cut off the German offensive. Artillery support became decisive as the 30th Division Artillery coordinated the fires of its own organic battalions, as well as reinforcing battalions from the 4th Division, 9th Division, VII Corps, and First Army. Forward observers located with the isolated 2nd Battalion, 120th Infantry, on Hill 317 were able to observe enemy movements and call up targets, and the 30th Division was able to mass more than twelve

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[1] Martin Blumenson, *US Army in World War II: The European Theater of Operations: Breakout and Pursuit* (Washington, DC: US Army Center of Military History, 1993), 457-60.

[2] Ibid., 469-70.

[3] Ibid., 471-72.

battalions of artillery at a time on the Germans.[4] When German armored forces attempted to retreat from the face of Hill 317 on 12 August, massed American artillery caught them in the open, destroying between fifty and one hundred vehicles.[5]

The success of the 30th Division at the Mortain was impressive, especially given that the unit had only entered combat in mid-June and had suffered a series of setbacks as well as a high volume of personnel turnover. Despite these handicaps, the division excelled at coordinating the actions of its subordinate units in combat, and it was able to shape the battlefield through the use of artillery—both organic and borrowed from other organizations. The employment of these forces—distributed across a battlefield, and from various parent organizations—would be hard to coordinate at any time, much less under fire.

The competence of American divisions fighting in World War II was astounding to America's allies and foes alike.[6] American forces arriving in France to fight in World War I had displayed an embarrassing lack of ability to maneuver and support large units.[7] In just two decades, America somehow caught up to—or surpassed—the abilities of European armies that had been practicing fighting mass armies since the age of Napoleon.

This amazing transformation in the interwar period was the result of a focused effort by a cadre of leaders in the US Army to build a capacity to fight at the division level and higher.[8] They

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[4] Mark Reardon, *Victory at Mortain: Stopping Hitler's Panzer Counteroffensive* (Lawrence: University Press of Kansas, 2002), 147; Blumenson, *Breakout and Pursuit,* 488.

[5] Reardon, *Victory at Mortain,* 265.

[6] Peter J. Schifferle, *America's School for War: Fort Leavenworth, Officer Education, and Victory in World War II* (Lawrence: University Press of Kansas, 2010), 195.

[7] Ibid., 10.

[8] John B. Wilson, *Maneuver and Firepower: The Evolution of Divisions and Separate Brigades* (Washington, DC: Government Printing Office, 1998), Chapters 3-7; Schifferle, *America's School for War,* Chapters 1-9. *Maneuver and Firepower* details the efforts made by the Army to design and perfect the division structure over a twenty-six year period between 1917 and 1943. The premise of *America's School for War* is that the Army identified a need for educated general staff officers to work at division and higher

developed doctrine to fight divisions on the modern battlefield; organized the divisions to facilitate command and control in large-scale combined arms warfare; and built a training plan to develop leaders to fight these lethal and complex organizations. This system turned the division into a complex machine with interchangeable parts engineered to operate under stress.

An excellent example of the implementation of this complex machine is the integration and coordination of artillery by the division. When field artillery transitioned from direct fire to indirect fire prior to World War II, it became the only combat arm where the soldiers firing a weapon depended completely on communication with soldiers outside their organization for input on where and when to shoot.[9] Cannoneers cannot see their target, and they are not able to tell whether or not they hit the targets at which they shoot. Communication and coordination from echelons above the field artillery batteries, battalions, brigades, and groups are essential, not just to get timely and effective field artillery fires, but to have any fires at all.

In addition to requiring a higher headquarters that was competent to coordinate field artillery, standardization was needed in the way that units were organized and operated. Field artillery units were tasked to support different regiments within a division to weight the main effort, and were transferred between divisions, sometimes on a daily basis, to weight the main effort at the corps and army levels.[10] This created a flexible force that was able to mass fires for

levels based on the experience of the Allied Expeditionary Force in World War I and reformed the general staff college at Leavenworth to fill this need.

[9] Boyd L. Dastrup, *King of Battle: A Branch History of the US Army's Field Artillery* (Fort Monroe, VA: Office of the Command Historian, US Army Training and Doctrine Command, 1992), 171. Although all the major powers entered World War I relying on artillery forces predominantly made up of direct fire guns (exemplified by the rapid-firing French 75mm gun), the inability of direct fire weapons to affect entrenched defenders led to the use of greater numbers of howitzers using indirect fire techniques. By the start of World War II, US Army field artillery units were composed almost exclusively of indirect fire artillery pieces, while the remaining direct fire cannons were used by the infantry (such as the 37mm anti-tank gun), or were mounted on tanks.

[10] "30th Infantry Division Order of Battle," US Army Center of Military History, accessed November 8, 2016, http://www.history.army.mil/documents/ETO-OB/30id-eto.htm. Between 14 June 1944 and 14 April 1945 thirty-four different field artillery battalions and five field artillery groups were attached to the 30th Infantry Division. During the battle of Mortain, two artillery groups were attached to the

decisive effect, but it required that procedures be the same at every artillery unit, and at every division headquarters for whom they might work. The machine had to have interchangeable parts.

Given the impressive results achieved by US Army divisions in World War II, this monograph asks the question: how do their modern day successors compare? Given the Army's transition to a brigade-based force in the mid-2000s, what is the function of a division? Does doctrine support this role? Are modern divisions organized to fulfill this role? Does the Army train and educate personnel to work within this organization to accomplish its role? If a division was once a massive machine—designed from the ground up for a purpose—how well does the machine run seventy years later, and will it keep running when things matter?

This monograph shows that, in fact, the current machine has some significant problems. Modularity passed the division's traditional role as the Army's primary integrator of combined arms down to the brigade combat team (BCT), but doctrine did not clarify a new role for the division. Doctrine describes Army divisions variously as fulfilling the older role as a directly engaged tactical headquarters, but also a much broader role similar to the role of the corps in the pre-modularity system. The organization of the modern division does not support either of these roles, and, when attempting to accomplish one or both, the division must compete with BCT and corps headquarters for the resources necessary to complete its mission.

Confusion on the modern division staff is compounded by a lack of detailed guidance and training for general staff procedures. The Army provides no detailed guidance for the myriad systems necessary to employ the combat power of the division, leaving the development of operating procedures to each individual division. This forces division staffs to focus planning efforts on their own internal organization rather than on engaging enemy forces, and it prevents the standardization necessary to change task organization during combat to react to changes in the operating environment.

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division in a single day (6 August 1944). This order of battle does not include general support field artillery units that answered calls for fire from the division when available.

This monograph follows changes to the Army's general staff education system to prepare personnel to work on a division staff. With the US Army Command and General Staff College (CGSC) implementing curriculum changes concurrent with the Army's transformation to modularity, officers are no longer trained to perform the detailed general staff work necessary to the operation of an organization on the scale of a division. The training gap created by the change in the CGSC curriculum creates a situation where the only forum for the Army to train division staff personnel is the warfighter exercise program facilitated by the Mission Command Training Program (MCTP). Meant to be a capstone exercise to train a division staff against a thinking competitor, the training gap forces MCTP to focus instead on training basic internal staff procedures during warfighter exercises.

This monograph details these findings in three sections (doctrine, organization, and training), comparing the modern division with its predecessor from the World War II era. Since fires are the primary way that division commanders directly affect the battlefield, the effects of the differences in doctrine, organization, and training are evaluated based on whether they enable or hinder the employment of division fires, specifically field artillery. Since general support field artillery units depend on the direct input from division headquarters to engage enemy targets, this makes their effectiveness a good measure for the effectiveness of division headquarters overall.

Finally, the monograph provides recommendations based on this research for the Army to improve the design of the division and "fix the machine." Some of these recommendations can be undertaken immediately, with no cost to the Army other than the labor required to update doctrine to clarify the role of the division echelon and provide some specific guidance for how various staff systems should operate. Other recommendations would require more significant resources, such as changes to division staff manning and the creation of division staff courses structured like those the Air Force requires for personnel assigned to work in air operations centers.

Comparison of Division Doctrine

Modern doctrine on division operations differs from World War II doctrine in both the descriptive elements of the role and missions of a division, as well as in the level of detail given to the mechanisms and procedures that allow a division to operate. While the first difference can be accounted for by a changing operating environment, the absence of guidance on procedures and mechanisms leads solely to friction and confusion. If we take the model of the division as a giant machine, the divisions of World War II were engineered with components that worked together, and these were interchangeable so that they could easily be moved between divisions. The following section provides evidence that modern doctrine creates a blueprint for a machine with parts that are not engineered to work together.

Army doctrine for division operations heading into major combat operations in the European Theater of World War II is contained in three core field manuals (FMs): the 1941 FM 100-5, *Field Service Regulations: Operations*, covering land combat in multiple environments up through the division level; the 1942 FM 100-15, *Field Service Regulations: Larger Units*, describing operations at the corps through army group level; and the 1942 FM 10-10, *Quartermaster Service in the Theater of Operations,* prescribing specific procedures for sustaining each level from division through army.[11] These sources are both descriptive (in what kinds of missions divisions will accomplish and how they should generally be employed) as well as prescriptive (serving as manuals that commanders and staff officers could use to perform their roles within divisions). They form a "playbook" for tactical employment of the division, as well as a "how-to" for the various sub-systems within a division. Reports, meetings, orders formats, and battle rhythms are all part of the doctrine that officers working at division-level had at their

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[11] Field Manual (FM) 100-5*, Field Service Regulations: Operations* (Washington, DC: Government Printing Office, 1941); FM 10-10*, Quartermaster Manual: Quartermaster Service in Theater of Operations* (Washington, DC: Government Printing Office, 1942); FM 100-15*, Field Service Regulations: Larger Units* (Washington, DC: Government Printing Office, 1942).

fingertips. Additionally, Army staff officers had FM 101-5, *Staff Officers' Field Manual,* which

provided a "how-to" for the internal workings of a staff, including standing operating

procedures.[12]

The modern division looks to FM 3-94, *Theater Army, Corps, and Division*, and Army

Techniques Publication (ATP) 3-91, *Division Operations,* for descriptive guidance on the roles

and responsibilities of the division. These two manuals are considered the primary source of

doctrine for the organization and employment of the division.[13] ATP 3-90.90, *Army Tactical*

Standard Operating Procedures, is also important to understanding the nature of modern doctrine

for division operations.[14]

The most obvious difference between the doctrine of these two eras is that the World War

II division had a far more focused and clearly defined mission. According to the 1941 FM 100-5,

"The *division* is the basic large unit of the combined arms."[15] It later states, "The ultimate

objective of all military operations is the destruction of the enemy's armed forces in battle."[16]

This Jominian view of the purpose of military operations guides the entire FM 100-5, which

provides specific guidance for employing combined arms as a division to destroy the enemy's

armed forces.

Current Army doctrine gives a far broader definition of the division and its purpose. The

2014 FM 3-94 describes a division as "the primary tactical headquarters for operations."[17] ATP 3-

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[12] FM 101-5*, The Staff Officers' Field Manual, The Staff and Combat Orders* (Washington, DC: Government Printing Office, 1940), 34.

[13] FM 3-94, *Theater Army, Corps, and Division Operations* (Washington, DC: Government Printing Office, 2014), viii; Army Techniques Publication (ATP) 3-91, *Division Operations* (Washington, DC: Government Printing Office, 2014), xi.

[14] ATP 3-90.90, *Army Tactical Standard Operating Procedures* (Washington, DC: Government Printing Office, 2011).

[15] FM 100-5, *Operations,* 2-3.

[16] Ibid.*,* 22.

[17] FM 3-94, *Theater Army, Corps, and Division Operations,* 1-2.

91 describes it as "an Army echelon of command above brigade and below corps. It is a tactical headquarters which employs a combination of brigade combat teams, multifunctional brigades, and functional brigades in land operations." [18] Aside from stating that a division is a tactical headquarters, these definitions explain no more than the fact that a division is an echelon between corps and brigade.

When looking at what is intended by "operations" or "land operations," these manuals specify four separate roles that a division must be prepared to fulfill. First, the division must be able to "serve as a tactical headquarters in campaigns and major operations." Second, it must be prepared to "serve as the joint and multinational land component headquarters under a joint task force (JTF) in crisis response and limited contingency operations." Third, it may "serve as a JTF headquarters (with augmentation) for limited contingency operations." Finally, a division must also be ready to "serve as the ARFOR [Army Force] within a JTF in crisis response and limited contingency operations." [19]

The multiple roles of the division reflect the vague purpose of Army operations given in FM 3-94: "Provide land power." Intended to provide flexibility for the employment of Army forces, Army service component commands (ASCCs), field armies, corps, and divisions all share the responsibility to be prepared to conduct the same missions.[20] Given this guidance, the division staff would have to be prepared to do anything, and to do it all the time.

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[18] ATP 3-91, *Division Operations,* 1-1.

[19] FM 3-94, *Theater Army, Corps, and Division Operations,* 1-7; ATP 3-91, *Division Operations,* 1-2.

[20] FM 3-94, *Theater Army, Corps, and Division Operations,* chapter 1. Comparing the missions of the theater army, the corps, and the division, all three headquarters must be able to serve as a JTF, a JFLCC, or an ARFOR. Corps and division echelons have the added mission to serve as a tactical headquarters. Within the World War II framework, if a higher echelon was not available, then the highest headquarters present in the theater would accrue the responsibilities of the absent echelons. For example, if there were no army group in a theater, a field army would accrue its responsibilities. Likewise, if a corps was the highest echelon in a theater, it would accrue the responsibilities normally executed by army and army group headquarters. To unburden tactical units as much as possible from headquarters responsibilities, these would not pass down below the level of the highest headquarters present. So if only a corps and supporting divisions were present in a theater, the corps headquarters would function in corps,

Figure 1 below compares the missions given to divisions, corps, and armies in 1942 versus 2016.[21] In the World War II system, administrative responsibilities were removed from the division and corps echelons to allow them to focus on their tactical mission. In the modern system, each of the echelons above brigade must be prepared to execute all roles.
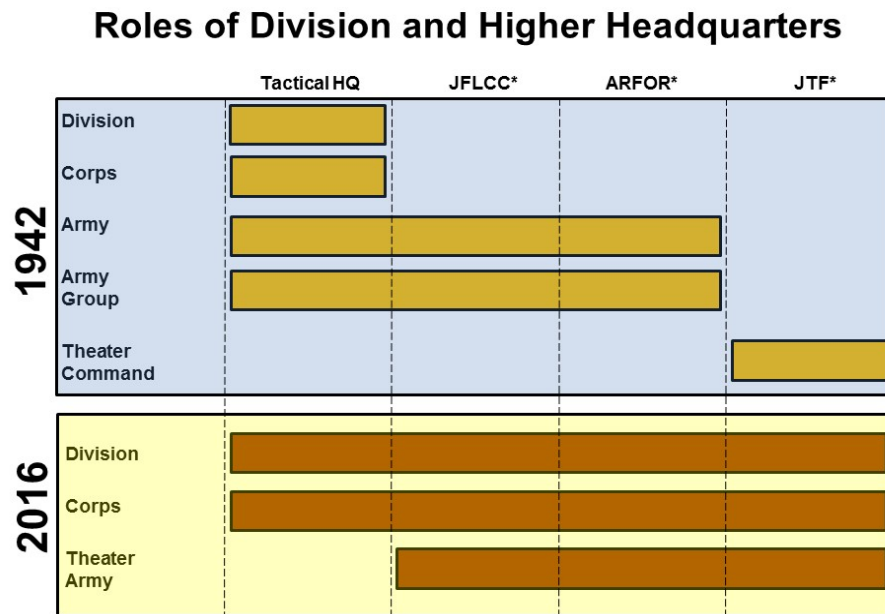

Figure 1. Roles of Division and Higher Headquarters. (Source: Author)

Despite prescribing four different missions for the division, FM 3-94 and ATP 3-91 go into far more detail providing examples of a division operating in the role of a "tactical headquarters in operations and campaigns." FM 3-94 dedicates over twenty pages to the employment of the division in a role as a tactical headquarters, while ATP 3-91 dedicates five out of its eight chapters to the mission of the division as a tactical headquarters using a fictional

army, and army group roles, but its subordinate divisions would retain only their doctrinal role as tactical headquarters.

[21] FM 100-15, *Larger Units*. Para 123-129 describes the army group; para. 130-132 describes the army, para. 146-150 describes the corps. JFLCC, ARFOR, and JTF were not roles assigned by the Army in World War II. These roles are compared against like duties prescribed in the 1942 FM 100-15, *Larger Units*.

scenario of the 53rd Infantry Division to illustrate how a division might deploy and conduct

tactical operations.[22]

FM 3-94 states that "the division is the Army's primary tactical warfighting headquarters.

Its primary role is as a tactical headquarters commanding brigades in decisive action." While this

statement is somewhat confusing in light of the three additional missions that a division is asked

to accomplish, it is made more confusing because the transformation to BCT modularity in 2003

made the BCT the primary tactical warfighting headquarters for the Army.[23] This is attested to in

FM 3-94, which states that, with modularity, "the BCTs become the centerpiece for Army

maneuver."[24]

Although FM 3-94 states that the division is the Army's primary tactical headquarters, in

fact the BCT fills this role. Throughout these manuals, the role of the BCT is to conduct tactical

tasks to engage with and defeat enemy forces, whereas the division is described as a force

provider which resources BCTs to conduct offense, defense, and stability missions.[25] The tactical

tasks detailed for a division in FM 3-94 include the basic forms of attack and defense, but,

looking deeper than the titles of sections, it is clear that the suggested method to accomplish any

task at the division level is to *tell a BCT to accomplish the task.* FM 3-94's diagram for an

example division movement to contact (Figure 2) illustrates this point. Within this example of a

movement to contact, each element and every mission is controlled by a BCT headquarters. This

leads the reader to wonder what exactly the division's role is in a *division* movement to contact?

One can infer from the way that FM 3-94 is written that the division actually has no role in

tactical warfighting. The creator of Figure 2 might agree, as the division headquarters has been

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[22] FM 3-94, *Theater Army, Corps, and Division Operations,* 7-1 through 7-20.

[23] Ibid.*,* 1-1, para. 1-1.

[24] Ibid.*,* 1-1, para. 1-2.

[25] ATP 3-91, *Division Operations,* 1-1, para. 1-2 and 1-3.

omitted from the *division* movement to contact. Division-level field artillery is also absent from Figure 2, a theme throughout modern division doctrine. In many places division doctrine is written without the requirements of field artillery in mind.
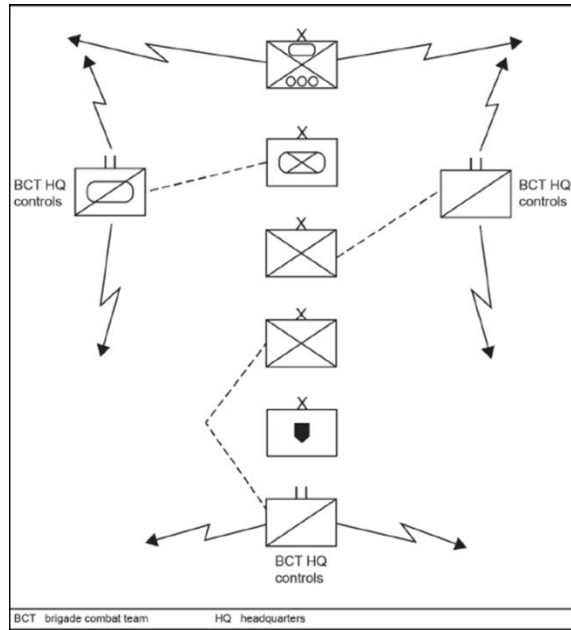

Figure 2. Example of Division Movement to Contact. FM 3-94, *Theater Army, Corps, and Division Operations* (Washington, DC: Government Printing Office, 2014), 7-12.

The confusion in current doctrine between the role of the division versus the role of the BCT in tactical operations is not an error on the part of the authors of FM 3-94 and ATP 3-91— rather it reflects conceptual debates within the Army. Beginning with Ardant du Picq in the nineteenth century, military theorists have noted that increased weapons ranges and lethality have led to greater dispersion of forces into smaller echelons covering larger areas.[26] The resulting concept of a dispersed or "empty battlefield" was supported by Army weapons lethality studies during the Cold War, and was a driving factor pushing the Army to move capabilities down to echelons lower than division.[27] After the end of the Cold War, this concept combined with the

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[26] Azar Gat, *A History of Military Thought* (New York: Oxford University Press, 2001), 303.

[27] James J. Schneider, "The Theory of the Empty Battlefield," *RUSI Journal* 132, no. 3 (1987): 37-38; Trevor N. Dupuy, *The Evolution of Weapons and Warfare* (New York: Da Capo Press, 1984), 307.

desire to create a force that was more strategically deployable resulted in the Army's

transformation to BCT modularity.[28]

  With this organizational focus on the BCT, what role is there for the division? During

operations in Iraq, at least after the initial invasion, divisions served as operational and

administrative headquarters.[29] The small battles of urban counterinsurgency rarely rose to a scale

requiring more than one BCT. With the exception of the Second Battle of Fallujah in November,

2004 (led by a Marine division, it should be noted), the role of divisions was to assign sectors and

allocate forces to the BCTs, which would actually conduct offensive, defensive, and stability

tasks to defeat the enemy. Compared to the World War II system, the modern role of the division

matches more closely with the role that was once managed by a corps (see Figure 3). Despite the
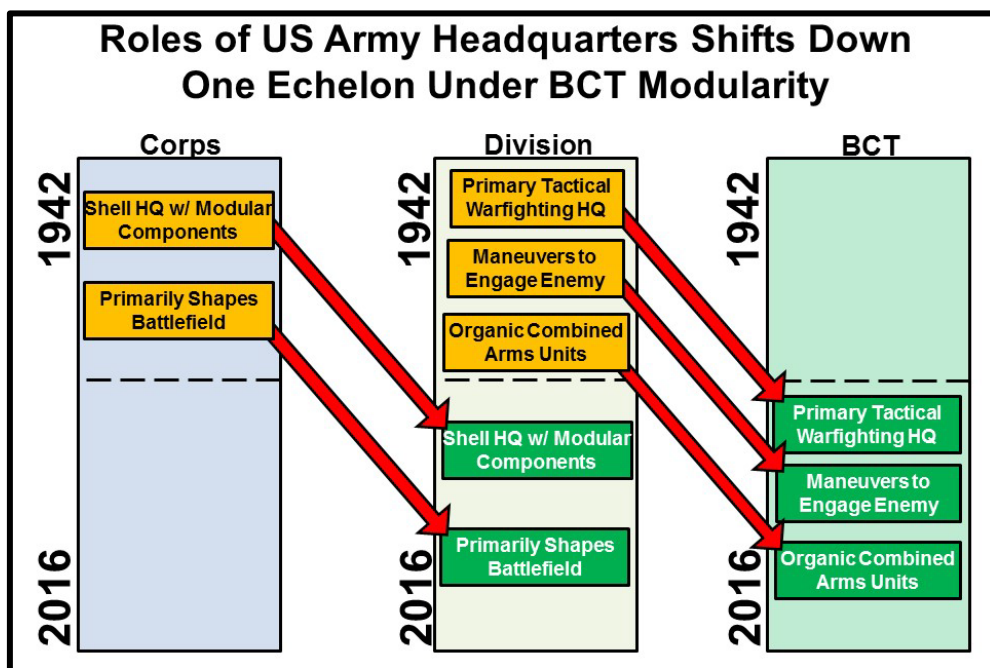
Figure 3. Shift in Battlefield Roles from World War II to 2016. (Source: Author)

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[28] William Donnelly, *Transforming an Army at War: Designing the Modular Force, 1991-2005* (Washington, DC: Government Printing Office, 2007), 3.

[29] Alan Batschelet, Mike Runey, and Gregory Meyer, "Breaking Tactical Fixation: The Division's Role," *Military Review* 89, no. 6 (November-December 2009): 35-42. In the article, the authors note that division headquarters in Iraq had been drawn into an administrative role of merely fulfilling requests for enablers from BCTs, and advocate for a more active "operational" role setting objectives, synchronizing efforts, and spanning the gap from the tactical to the strategic level of war.

language used in the modern FM 3-94, it is also important to note that divisions are described along with corps and theater armies in one manual, while the 1942 FM 100-15, *Field Service Regulations, Larger Units,* provided guidance for corps, armies, and army groups, and the 1941 FM 100-5, *Field Service Regulations, Operations,* addressed only operations for the division as a combined arms organization.[30]

This view of the role of the division has come into question in recent years due to the prospect of large-scale combat operations against a peer or near-peer competitor. While some theorists have claimed that the era of state-against-state conflict with major combat operations is long past, Russian aggression starting with the invasion of Georgia in 2008 has caused Army leadership to re-evaluate its stance.[31] During the Georgian invasion, the annexation of Crimea, and combat operations in the Donbas region of Ukraine, Russia has shown that far from being an anachronistic concept, major combat operations by large-scale mechanized forces are still a highly effective tool for our rivals.[32]

Recognizing that separate self-contained BCTs fighting on their own could be overwhelmed in detail by an enemy able to coordinate and mass divisions and corps, the Army has worked to rebuild its ability to fight at the division and higher level.[33] The resulting doctrine

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[30] FM 100-15, *Larger Units,* ii.

[31] "Army Chief Issues Stark Warning to Potential Enemies," Military.com, October 5, 2015, accessed December 15, 2016, http://www.military.com/daily-news/2016/10/05/army-chief-issues-stark-warning-to-potential-enemies.html. General Milley warns that war with Russia would entail conventional combat on a scale not seen since World War II, and that, after fifteen years of counterinsurgency, the Army is out of practice.

[32] Phillip Karber, "Lessons Learned from the Russo-Ukrainian War (draft)," Historical Lessons Learned Workshop, Johns Hopkins University Applied Physics Laboratory and US Army Capabilities Center, July 6 2015, author's collection. The "lessons learned" describe the use of large-scale mechanized warfare in the Donbas region of Eastern Ukraine as witnessed by Dr. Karber on multiple excursions into the region.

[33] Daniel Wallace, "III Corps Participates in Warfighter Exercise," *Fort Hood Sentinel*, January 1, 2015, accessed January 10, 2017, http://www.forthoodsentinel.com/news/iii-corps-participates-in-warfighter-exercise/article_77cb7bc6-7e4c-51f3-a348-9293816cd318.html. This article interviews III Corps Chief of Staff, Col. James C. Markert who explains how the decisive action training scenario requires more coordination from higher echelons than that required during "dispersed" counterinsurgency.

appears to be an attempt to retain BCT-centric operations, but to then state that there will be

division-level operations where BCTs will work in conjunction with each other. This is a

significant difference from the World War II-era doctrine in which the division directly integrated

combined arms to destroy enemy formations.

The resulting mix of concepts between BCT-centric and division-centric warfighting

causes confusion for many of the sub-systems of the division, and creates several obstacles

specifically for the employment of field artillery. Field artillery has the physical capability to

mass fires across an entire division area of operations, providing the ability for higher-level

commanders to shape the battlefield for their subordinates. This capability, which has been

credited as the primary advantage of American Army forces during World War II, depends on

coordination at the division level. This monograph shows that such coordination is lacking in

modern doctrine.

The World War II concept for the use of field artillery is clear and consistent throughout

doctrine of the period. As per FM 100-5, *Field Service Regulations*, division artillery's primary

mission is to support maneuver units; corps artillery's primary mission is to conduct counterfire;

and army artillery's primary mission is distant interdiction and destruction fire.[34] It also states,

"Whenever the situation permits, both direct support and general support artillery are retained

under centralized control" because "field artillery operates most effectively in this manner."[35]

This system allowed flexibility of field artillery fires, and enabled the division to mass

overwhelming fires at the critical point of the battlefield. This explains how at Mortain, the

isolated 2nd Battalion, 120th Infantry, on Hill 317 could receive enough artillery support to

survive the onslaught of the German LXVII Panzer Corps.

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[34] FM 100-5, *Operations,* 54-56.

[35] Ibid.*,* 52.

Modern doctrine is neither specific, nor consistent as to the role of field artillery within a division. Field artillery within the division references FM 3-94 and ATP 3-91, as well as the 2012 ATP 3-09.24, *Techniques for the Fires Brigade*, and most units currently reference a "Field Artillery Brigade and Division Artillery White Paper" distributed by the Field Artillery School at Fort Sill in May 2014.[36] These documents are unclear as to what field artillery formations are expected to be present in an Army division. FM 3-94 states that every division should expect to have a field artillery brigade (FAB), but this was superseded by guidance given in the May 2014 white paper which moved the FAB to corps level and established a division artillery (DIVARTY) at each division.[37] ATP 3-91, published in October 2014, includes the DIVARTY, but still retains the statement that each division will receive a FAB.[38] Even if the reader accepts that the inclusion of both a DIVARTY and a FAB in ATP 3-91 is meant to explain that divisions will only receive the support of a FAB until they have fielded a DIVARTY (a prospect successfully challenged in a recent warfighter exercise when a division commander requested, and received, a full field artillery brigade in addition to his DIVARTY), this clears up very little because, as per ATP 3-91 and the white paper, a DIVARTY contains no organic field artillery assets.

With the exception of the white paper, which is slightly more nuanced, these documents treat divisional field artillery units much as any of their BCTs. FM 3-94 states that the "field artillery brigade conducts operations to provide shaping and decisive fires for the division."[39] The

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[36] Army Techniques Publication (ATP) 3-09.24, *Techniques for the Fires Brigade* (Washington, DC: Government Printing Office, 2012); US Army Field Artillery School, "Field Artillery Brigade, Division Artillery (DIVARTY)," white paper, May 2014, author's collection. The Army changed the name of "Fires Brigades," as referenced in ATP 3-09.24, to "Field Artillery Brigades" with the release of the white paper in 2014.

[37] FM 3-94, *Theater Army, Corps, and Division Operations,* 6-6; White Paper, *Field Artillery Brigade, Division Artillery,* 5.

[38] ATP 3-91, *Division Operations,* 1-12 through 1-13.

[39] FM 3-94, *Theater Army, Corps, and Division Operations,* 6-6.

description of the brigade continues to say that FABs have the "capability to reconnoiter, detect, and attack targets and confirm the effectiveness of their fires."[40] The concept relayed by current doctrine is that responsibility for fires can be delegated from the division to the FAB, and then just like maneuver BCTs, the FAB will be able to use "disciplined initiative" to execute its mission with little interference from division.[41]

Leaving aside the question of whether or not a FAB supports a division, there is a fatal flaw in the logic of applying the same approach to an artillery brigade as is used for a maneuver brigade, which is that FABs lack the ability to "reconnoiter, detect" or "confirm the effectiveness of their fires." There are no reconnaissance assets in a FAB, nor are there forward observers, or any type of intelligence collection assets.[42] The only organic system that a FAB has that will locate targets of any kind are counterfire radars, which will provide a point of origin for enemy artillery fired toward friendly forces.[43] The FAB—as well as the DIVARTY, if it has been provided field artillery battalions—requires support from the division in order to detect targets and confirm the effectiveness of fires.

There is a clear disconnect between the division doctrine contained in FM 3-94 and ATP 3-91 and the actual physical capabilities of supporting field artillery units. For the FAB to be able to engage targets, the division headquarters itself must actually manage the majority of the

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[40] Ibid.

[41] Army Doctrine Publication (ADP) 6-0, *Mission Command* (Washington, DC: Government Printing Office, 2012), 1. "Mission command is the exercise of authority and direction by the commander using mission orders to enable disciplined initiative within the commander's intent to empower agile and adaptive leaders in the conduct of unified land operations."

[42] ATP 3-09.24, *Techniques for the Fires Brigade,* 3-17. "Without augmentation, the FIB lacks the capability to conduct either surveillance or reconnaissance activities to support its fires mission. Rather the FIB relies on information from the supported command HQ."

[43] FM 3-94, *Theater Army, Corps, and Division Operations,* 6-6. The diagram immediately beneath the statement that describes the capabilities of the FAB clearly displays that the brigade lacks the assets to execute many of those tasks.

targeting process that allows the FAB to attack the enemy. The system relies on command and control from outside of the brigade, however the doctrine delegates the entire process to the brigade itself. The philosophy of mission command in this case results in the division headquarters delegating a mission that should be controlled at division level down to a brigade that is not structured to accomplish it. If the division were a giant machine, these components of the modern version were not designed to fit together.

These publications provide little guidance for direct support artillery battalions, which under modularity are organically assigned to BCTs. While the World War II system centralized all of the artillery battalions at division and would then assign them to support subordinate maneuver units, the current doctrine locks them in position with a specific BCT.[44] Given the increased range of modern artillery, it should be possible to mass the fires of multiple battalions in support of a unit in contact (artillery battalions of adjacent BCTs firing in support). However, doctrine does not include "adjacent units" in the list of entities that an artillery battalion will support.[45] In the World War II system, a division commander could quickly mass the fire of multiple artillery battalions to support any infantry or armored battalion that made contact with the enemy, but modern doctrine ensures that a unit in contact will only receive supporting artillery fire from a single battalion of field artillery. The guns of the other BCTs within the division, even if they are within range to support, remain silent.

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[44] FM 100-5, *Operations,* para. 52.

[45] FM 3-09, *Field Artillery and Fire Support* (Washington, DC: Government Printing Office, 2012), 1-32. Tables 1-1 and 1-2 provide guidance for field artillery units on the priority of answering calls for fire based on command relationship (table 1-1) and support relationship (table 1-2). These tables do list the force field artillery headquarters (presumably a DIVARTY or field artillery brigade) as an entity that a field artillery battalion should answer calls for fire from, yet for an organic direct support artillery battalion this would be the last priority. With this system, if a division wanted to mass the fire of multiple field artillery battalions on a single target, the force field artillery headquarters could send the request down to multiple neighboring battalions, but would only receive fire if the battalions' BCTs had no other missions of any kind for them.

An enterprising planner working at division might work around this problem by issuing orders to BCTs not in contact with the enemy to provide their supporting artillery battalions to provide reinforcing fires to a BCT in contact with the enemy. While this is possible under modern doctrine, and is mentioned briefly in ATP 3-91, it faces many challenges in practice.[46] From whom would these battalions receive their fire missions? Who would position them? Who would supply them? World War II doctrine had a simple standard methodology that covered all of these questions in FM 100-5.[47] Modern doctrine relies on individual BCTs and divisions to generate standard operating procedures (SOPs) to overcome these obstacles, but these SOPs then become a source of friction and confusion as they eliminate the interchangeability of the components of the machine.

Take for example the guidance provided by ATP 3-91 for the integration of new brigades into a division. It details a process that includes orienting new subordinate units on the current mission and environment and training commanders and staffs on the specific division's SOPs. Other seemingly mundane requirements such as building interconnectivity of mission command systems and granting digital systems permissions and passwords will have crippling effects if not completed.[48] Because "standard" operating procedures and digital networks were not designed for standardization at larger than BCT-level, integration into a new division is a lengthy process.

It is hard to imagine the hodge-podge of units fighting under the 30th Division at Mortain conducting anything like what is required to integrate into a modern division in a timely manner. An apologist might argue that a BCT might be able to operate under a new division in an emergency without this integration (albeit at a degraded capacity), but for field artillery units the lack of this integration will prevent them from engaging the enemy at all. Without "permissions

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[46] ATP 3-91, *Division Operations,* 1-15.

[47] FM 100-5, *Operations,* para. 47-58.

[48] ATP 3-91, *Division Operations,* 1-14.

and the necessary passwords to access each other's information systems," field artillery units are unable to receive digital fire missions from the unit they support, and without "exchanging standard operating procedures," field artillery units are unlikely to know who within the supported organization should provide them with fire missions in the first place.[49]

The 2011 ATP 3-90.90, *Army Tactical Standard Operating Procedures*, makes an effort to address the incompatibility of different unit SOPs. It cites Army Regulation 34-4, *Army Standardization Policy*, to define standardization as, "the management principle which fosters the development and sustainment of a high state of proficiency and readiness among Soldiers and units throughout an organization." It goes on to explain that "standardization throughout an organization reduces operational turbulence and confusion between units when force tailoring occurs."[50] To address the standardization problems that arise from having every unit at every echelon across the US Army develop its own procedures independently, ATP 3-90.90 directs readers to a website populated with example SOPs. The authors of the ATP hope that units across the Army will begin to use the examples on the website to build their own SOPs, and that "ideally, SOPs throughout the Army should increase in similarity," and that "this will help units communicate and coordinate with one another more easily."[51]

The somewhat curious strategy for standardization undertaken by ATP 3-90.90, is essentially to let hundreds of units develop their own procedures and hope that they develop identical, or at least compatible procedures. Similar to the 'tactical' guidance for divisions to

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[49] Depending on the on the situation, field artillery units may receive fire missions directly from observers, from Fire Support Centers at battalion, brigade, and division levels, or from reinforced field artillery units.

[50] ATP 3-90.90, *Army Tactical Standard Operating Procedures,* 1-2, para. 1-7. AR 34-4, *Army Standardization Policy*, is not currently listed on the Army Publications Directorate website as an active regulation. US Army, "Army Regulations," *Army Publications Directorate*, accessed December 3, 2016, http://armypubs.army.mil/Search/ePubsSearch/ePubsSearchForm.aspx?x=AR.

[51] ATP 3-90.90, *Army Tactical Standard Operating Procedures,* ii-iii.

warfight by ordering brigades to accomplish every task, this appears to reflect an institutional refusal by the modern Army to provide any detailed guidance to its forces. Rather than require all subordinate echelons to develop their own procedures, the US Army of World War II provided a standard way to run the machine.

Comparison of Division Organization

As the doctrine review mentioned in the previous section, there are areas where the Army's current concept of a division is not aligned with the actual organizational structure of the division. This section describes the structure of the modern division—both its subordinate units and the organization of the headquarters staff—and compares it to both the division and corps organizations of World War II. This analysis of the modern division shows that it is not designed to complete the tasks required in a modern large-scale conflict. The lack of design is most obvious in systems like artillery that require coordination at multiple echelons in order to be employed against the enemy in combined arms.

The World War II machine used the division as the primary element of tactical combat power. The divisions that fought at Mortain were combined arms organizations with organic maneuver and fires units. The army designed divisions of different types in order to fit the roles needed by the commanders in the European and Pacific theaters. The different types of Army divisions built to fight in World War II were infantry, cavalry, armored, and airborne divisions.[52] These divisions were built with subordinate regiments of infantry, armor, and artillery that were designed to be the minimum essential forces necessary to accomplish the mission of each type of division. Additional assets needed by the division would be provided by the corps, which would

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[52] Maurice Matloff, "The Ninety-Division Gamble," in *Command Decisions*, ed. Kent Roberts Greenfield (Washington, DC: US Army Center of Military History, 1987), 374. The total number of US Army divisions fielded during World War II were 67 infantry, 2 cavalry, 16 armored, and 5 airborne divisions.

weight the effort of its subordinate divisions through the use of corps artillery groups, armored and tank destroyer battalions, and other specialized units.

The US Army corps echelon, like VII Corps (the higher headquarters of the 30th Infantry Division at Mortain) in World War II was a shell headquarters consisting of a staff with no other organic units. The Army would fill out this shell with various divisions as well as corps-level separate units. The corps would employ these separate units, such as corps artillery groups, to attack enemy artillery, interdict enemy forces not yet engaged with divisions, and to shape the battlefield so that when divisions engaged, it would be at a favorable force ratio.

These two echelons (division and corps) from the World War II era are comparable one level down in the modern Army: the modern BCT is similar to the old division, and the modern division is more similar to the corps of the previous era. Like World War II divisions that were organized with organic elements to be specific types of combined arms teams, the modern BCT is built with organic combined arms units as either Armored, Infantry, or Stryker Brigade Combat Teams (ABCT, IBCT, SBCT). Similarly, the World War II-era corps was a shell headquarters designed to receive division and corps-level assets to accomplish specific missions, which is precisely what the modern division headquarters is designed to do.

Although functionally the modern BCT and division correlate to the division and corps of the previous era, they are far different organizationally. The scale of the organizations of the modern era is smaller when we compare BCT to division and division to corps, yet because of the longer range of modern artillery, the amount of territory they can affect is far greater. However, the modern division has far fewer assets available to affect the battlefield than did the corps of old. Finally, the headquarters staffs of the organizations are far different today than in the older era; the modern versions are larger than their predecessors, with broader arrays of staff functions, yet have fewer (and more junior) personnel responsible for the core functions of fire and maneuver.

The modern BCT is smaller than the World War II division, and likewise, the modern

division is smaller than the corps of the previous era. A World War II division in 1943 ranged

from 9,358 (light division) to 14,253 (infantry division) personnel, while modern BCTs range

from 4,222 (ABCT) to 4,417 (SBCT) personnel.[53] The number of major weapon systems was also

larger in the divisions of the earlier era, an armored division in 1943 contained two 263 tanks,

while the ABCT of today contains just eighty-eight tanks.[54] The difference in field artillery

systems is also significant, with the modern ABCT supported by a single battalion of eighteen

howitzers, compared to the previous armored division which fielded three battalions of twelve

howitzers, for a total of thirty-six howitzers.[55] The difference in artillery is more striking when a

modern IBCT supported by twelve 105mm and six 155mm howitzers is compared to a World

War II infantry division armed with three twelve-gun battalions of 105mm howitzers (thirty-six

total) and one twelve-gun battalion of 155mm howitzers.[56] While improvements to weapon

ranges allow the modern M119 105mm howitzers to fire almost as far at the larger M1 155mm

howitzer of the World War II era, the munitions being fired in 2016 are nearly identical to those

used in 1943, with similar destructive areas of effect.[57]

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[53] Wilson, *Maneuver and Firepower,* 189, 183; US Army Maneuver Center of Excellence (MCOE), *Supplemental Manual 3-90, Armored Brigade Combat Team* (Fort Benning, GA: US Army MCOE, 2015); MCOE, *Supplemental Manual 3-90, Infantry Brigade Combat Team* (Fort Benning, GA: US Army MCOE, 2015); MCOE, *Supplemental Manual 3-90, Stryker Brigade Combat Team* (Fort Benning, GA: US Army MCOE, 2015).

[54] Wilson, *Maneuver and Firepower,* 185. MCOE, *Supplemental Manual 3-90, Armored Brigade Combat Team*. The modern ABCT contains 88 M1 Abrams Tanks (ABCT Headquarters: 1, Cav Squadron: 14, Infantry Combined Arms Battalion: 15, two Armor Combined Arms Battalions combined: 58). The ABCT also contains 148 Bradley Fighting Vehicle variants (ABCT Headquarters: 1, Brigade Engineer Battalion: 19, Cav Squadron: 41, Infantry Combined Arms Battalion: 32, two Armor Combined Arms Battalions: 36, Field Artillery Battalion: 19).

[55] Wilson, *Maneuver and Firepower*, 186; MCOE, *Supplemental Manual 3-90, Armored Brigade Combat Team*.

[56] Wilson, *Maneuver and Firepower*, 183; MCOE, *Supplemental Manual 3-90, Infantry Brigade Combat Team*.

[57] Dastrup, *King of Battle,* 313. The maximum range of the current M119 105mm howitzer is 14.3 km firing standard munitions or 19.3 km firing rocket assisted projectiles (RAP); Dastrup, *King of Battle,*

World War II corps and modern divisions have more flexible force structures than their subordinate units, with a wider range of total force size possible, but the scale of the older corps formation dwarfs the current division in most cases. As a benchmark for the size of the current division we can reference the example force structure from FM 3-94 provided earlier for a movement to contact, which showed a division consisting of one ABCT, one SBCT, two IBCTs, and a maneuver enhancement brigade (MEB). We should also add one of each of the other functional brigades (combat aviation brigade, field artillery brigade, and sustainment brigade) since FM 3-94 is explicit that a division will control at least one of each type. Including the division headquarters staff, this will bring the total number of personnel within the division to approximately 22,000 personnel, of which 17,165 would be assigned to the four BCTs, and approximately 4,000 would be assigned to the supporting functional brigades.[58] To compare with a World War II corps, we can use VII Corps—the 30th Division's higher headquarters at Mortain—which commanded six divisions, fourteen battalions of corps-level artillery, and various tank destroyer and armored groups totaling approximately 100,000 personnel, of which approximately 78,000 were assigned to infantry and armored divisions, and 11,000 were assigned

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237. The 155mm M1 howitzer had a maximum range 14.95 km. Standard high explosive rounds for 105mm and 155mm artillery have remained essentially unchanged since the interwar period. Various time fuses were developed during World War I and in its aftermath to assist with vertical attack of entrenched troops, and along with the practice of scoring the inside of the shell canister to produce more shrapnel on detonation, high explosives shells and fuses have remained nearly unchanged since then. Other improvements to available field artillery munitions increase range (such as RAP), or accuracy (such as the Excalibur precision guided munition). Dual-purpose improved conventional munitions (DPICM), consisting of artillery shells filled with anti-vehicle and anti-personnel bomblets, represented a significant increase to the lethality of field artillery fires, but because of concerns over the dud rate of submunitions left on the battlefield, DPICM is currently being phased out of the Army inventory.

[58] MCOE, *Supplemental Manual 3-90, Armored Brigade Combat Team*; MCOE, *Supplemental Manual 3-90, Infantry Brigade Combat Team*; MCOE, *Supplemental Manual 3-90, Stryker Brigade Combat Team*; FM 3-04, *Army Aviation* (Washington, DC: Government Printing Office, 2015). The estimation of 22,000 personnel is based on: 17,165 personnel within the assigned BCTs, 700 personnel within the FAB, 2,500 personnel within the Combat Aviation Brigade, 1,000 personnel within the MEB, and 1,000 personnel in the sustainment. The battlefield surveillance brigade (BFSB)—although it is mentioned in FM 3-94—has been removed from this calculation since these brigades no longer exist in the US Army.

to corps-level artillery battalions.[59] Although the organizational concept of the modern division is similar to the corps of the previous era, the scale is significantly different.

The amount of territory that can be controlled by a BCT is smaller than the older division structure, but the range of its modern artillery allows it to affect a far larger area. The frontage of a World War II infantry division in the attack was approximately 4,000 yards, and could expand to several times that distance.[60] At the battle of Mortain, the 30th Division was ordered to defend a ten-mile (17,600 yards) stretch from St. Barthélemy to Barrenton.[61] This distance is supportable by the division artillery which would be able to mass the fires of its M1 155mm howitzers (maximum range 16,350 yards) on targets throughout the division's area of operations. The smaller M2A1 105mm howitzers with a range of 12,330 yards had sufficient range to provide direct support to a single infantry regiment, and could reinforce the fires of neighboring regiments.[62] Because the range of the division's artillery corresponded with the area occupied by the division, opportunities to provide reinforcing artillery fire to neighboring divisions were few. This is reflected in FM 100-5, which directed division artillery to be prepared to support the mission of the corps artillery, but not the mission of neighboring divisions.[63] Likewise, divisional

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[59] Wilson, *Maneuver and Firepower,* 183, 186; Blumenson, *Breakout and Pursuit,* 159. During the battle of Mortain, the VII Corps controlled the 1st, 4th, 9th, and 30th Infantry Divisions (14,253 soldiers each), the 2nd and 3rd Armored Divisions (10,937 soldiers each), twenty-one corps artillery battalions (approximately 550 soldiers each), and various other formations such as tank destroyer groups and air defense artillery battalions.

[60] FM 100-5, *Operations,* para. 474. "As a general guide, an infantry battalion at full strength in a main attack seldom is assigned a frontage less than 500 yards or more than 1,000 yards measured on the front of the hostile position." Given a frontage of two battalions per regiment (two up, one back), this provides a regimental frontage of 1,000-2,000 yards. Given a division frontage of two regiments (again, two up, one back), this equates to a division frontage of 2,000-4,000 yards, easily supportable by the howitzers of the divisional artillery units of the era.

[61] Blumenson, *Breakout and Pursuit,* 467.

[62] Dastrup, *King of Battle,* 237. Dastrup mislabels the M2 105mm howitzer as the M1 105mm howitzer, and since his chart of available artillery pieces is dated for 1942, does not account for the upgrade in 1943 of the M2 howitzer to the M2A1 with a slightly longer range—12,330 yards as opposed to 12,150 yards of the original M2.

[63] FM 100-5, *Operations,* para. 54-55.

artillery battalions were organic to specific divisions and usually did not provide reinforcing fires to neighboring divisions without orders transferring them to the supported division, unlike corps artillery battalions that regularly provided reinforcing fires to divisions throughout the corps area while still under corps-level control.[64]

The modern BCT faces similar organizational barriers to providing artillery fire to support neighboring BCTs, but unlike the artillery of the older era, modern artillery systems have a range far greater than the area than a BCT is able to occupy. At a third of the size of the World War II infantry division, an IBCT will be able to occupy a smaller frontage than the example of the ten miles (sixteen kilometers) assigned to the 30th Infantry Division at Mortain, but the M777 155mm howitzers in its organic field artillery battalion have a range of thirty kilometers.[65] If this battery were positioned at the far end of the IBCT defensive position, it could fire over the length of the entire position, and a similarly arrayed neighboring IBCT. This greater range provides a fire support "umbrella" that could easily support neighboring BCTs to allow the massing of multiple battalions of artillery in support of the most critical point on the battlefield. Given the scarcity of artillery in the modern BCT as compared to the older division (for example eighteen in

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[64] Dastrup, *King of Battle,* 212. Corps artillery battalions were twelve gun battalions, usually organized under field artillery groups. The field artillery group was a shell organization, consisting organically of only a headquarters battery. This scaled down administrative structure eased the transfer of the group's battalions between corps, and emphasized its role to provide a pool of reinforcing field artillery battalions for division artilleries and corps field artillery brigades.

[65] CGSC Student Text 100-3, *Battle Book* (Fort Leavenworth, KS: US Army CGSC, 2001) 9-15, 14-1; CGSC Student Text 100-3, *Battle Book, Academic Year 07/08* (Fort Leavenworth, KS: US Army CGSC, 2007); ATP 3-20.97, *Cavalry Troop* (Washington, DC: Government Printing Office, 2016), appendix B. Current doctrine does not provide a guideline to calculate the frontage of BCTs. Planning documents, such as Student Text 100-3 once provided planning guidance to estimate the amount of frontage for certain Army units, but in the 2007 version (still the current version available to students), these guidelines have been removed. ATP 3-20.97, released in September 2016, provides some guidance for the frontage of cavalry screens. In open terrain, the cavalry squadron in an IBCT can cover approximately 35 km. Given this distance as an absolute maximum amount of frontage that an IBCT can occupy, the organic M777 howitzer battery with a range of 30km located in the center of the IBCT formation can range to support neighboring BCTs on both sides of the IBCT.

the IBCT, versus forty-eight in the 1943 infantry division), the ability to mass battalions from outside the BCT is critical.

Modern technology makes it possible to mass all of the modern division's artillery in support of whichever BCT is in contact with the enemy, but organizational barriers in the current system prevent this from occurring. Direct support artillery battalions in BCTs are subordinate to BCT commanders (as opposed to a force field artillery commander), and remain organizationally focused on operations within the BCT area of operations. The BCT lacks perspective on the larger effort to the maximum range of its field artillery systems both due to the focus on the local mission and a physical lack of capability to see the battlefield beyond the immediate vicinity of the BCT's maneuver forces. While an apologist might argue that the BCT commander could take the responsibility of providing field artillery support to the rest of the division area of operations seriously and allow artillery fires planning to drive operations, practical experience has shown that this does not happen. In the 2008 white paper titled "The King and I: The Impending Crisis in Field Artillery's Ability to Provide Fire Support to Maneuver Commanders," three former BCT commanders describe the deterioration and neglect of field artillery battalions under maneuver BCTs.[66] According to their observations, field artillery units have deteriorated in their core competency of providing fires, and the issue is exacerbated because field artillery personnel were operating within maneuver units, rather than under the mentorship of senior field artillery leaders with the technical knowledge to train and develop fire support personnel.[67] These arguments are evidence that not only are BCT commanders not in a position to support distributed field artillery fires to the rest of the division, but also that their mission set as a BCT makes it difficult to even

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[66] Sean MacFarland, Michael Shields, and Jeff Snow, "The King and I: The Impending Crisis in Field Artillery's ability to provide Fire Support to Maneuver Commanders," white paper, May 2008, accessed August 21, 2016, http://www.npr.org/documents/2008/may/artillerywhitepaper.pdf, 2-3.

[67] Ibid*.,* 2.

provide enough guidance and support to maintain responsive field artillery fires within their own BCT.

The lack of perspective from a BCT commander is part of one of the other fundamental organizational differences between the formations of World War II versus their modern equivalents, which is that division level commanders and staffs are more senior than brigade-level staffs. Technology may allow a brigade to physically handle the mission-set and terrain once occupied by a division, but there has been no similar increase in the capacity of the human beings who man the Army's staffs and weapons systems. BCT commanders themselves may have a similar amount of seniority to the division commanders in the World War II era, but this does not hold true for their staffs.[68] The assistant division commander—a brigadier general—is scaled down to a lieutenant colonel as the executive officer in the modern BCT, and all BCT operations fall under the oversight of a major with between ten and sixteen years of service. During World War II these functions were overseen by the division chief of staff, a colonel who was usually a graduate of the Command and General Staff Officers' Course (CGSOC) and might have over twenty years of service.[69]

While the level of seniority of the staff has decreased with a move from division-centric operations to brigade-centric operations, the scope of responsibilities has increased tremendously in the modern era. World War II-era division staffs focused on employing fire and maneuver to destroy enemy forces, and the Army designed the overall system to ensure that divisions were not

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[68] Schifferle, *America's School for War*, 1; "Command and General Staff College: Who is Sean MacFarland," Allgov.com, accessed February 27, 2017, http://www.allgov.com/news/appointments-and-resignations/command-and-general-staff-college-who-is-sean-macfarland?news=841817. For example, Ernie Harmon was commissioned in 1917, and arrived in North Africa in command of the 2nd Armored Division in November 1942 as a major general with twenty-five years of service. Sean Macfarland was commissioned in 1981 and commanded the 1st Brigade Combat Team of 1st Armored Division in Iraq in 2006 as a colonel with twenty-five years of service.

[69] Schifferle, *America's School for War*, 175. Out of a sample of 25 division chiefs of staff serving during World War II, 10 were graduates of the two-year interwar CGSOC course, 5 were graduates of the one-year wartime course, and only 6 had no Fort Leavenworth education.

encumbered with responsibilities—such as logistics—that would distract from their focus on warfighting. Staff functions that were not immediately necessary to integrating combined arms were consolidated at different echelons so that staffs were not overburdened and their primary mission would not suffer. This older system assigned different responsibilities to every echelon from company through theater army, so that the entire force functioned properly when fielded together. Logistics, for instance were handled by the theater army, and companies drew supplies directly from higher echelon depots, taking the burden of logistics management off battalion, regiment, and division headquarters. [70] The modern system, on the other hand, essentially assigns all functions to every echelon down to BCT level. While the division chief of staff in the 1940s managed intelligence, fire support, and maneuver to engage the enemy, the brigade operations officer of 2016 has to also juggle information operations, electronic warfare, civil affairs, airspace management, and a host of other functions on a brigade staff which has grown in size to match the older division headquarters staff.[71]

Another significant difference between the formations of World War II and today is the existence of reconnaissance units at the corps and division levels. A corps fighting in Europe would receive a reconnaissance regiment, and a division contained either a reconnaissance troop or squadron.[72] The modern division has no dedicated reconnaissance unit, although if one considers the modern BCT the equivalent of the older division, the reconnaissance surveillance and target acquisition (RSTA) squadron of the BCT provides a similar capability to what was available to a division in 1943. There is a major difference, however, in that the division

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[70] FM 10-10, *Quartermaster Field Manual,* para. 34.

[71] Wilson, *Maneuver and Firepower,* 183; MCOE, *Supplemental Manual 3-90, Infantry Brigade Combat Team, Stryker Brigade Combat Team, Armored Brigade Combat Team.* 1943 infantry division headquarters: 149 plus 116 in the division artillery headquarters battery. Current IBCT headquarters: 122, ABCT headquarters: 126, SBCT headquarters: 130.

[72] Wilson, *Maneuver and Firepower,* 183, 186.

reconnaissance troop or squadron of World War II worked in conjunction with the cavalry elements at corps- and even army-levels. The BCT-level RSTA squadrons of the modern force are now quite literally the first and last ground reconnaissance assets of the US Army.

Most of this section has focused on the many advantages that the American division possessed during World War II as compared to the modern organization. However, there is one major capability available to the modern division that was not a part of its World War II predecessors, whether we compare the modern division to the older division or to the older corps. That capability is the combat aviation brigade. With over one hundred combat aircraft, the addition of a combat aviation brigade gives the division its own private air force larger than most NATO member states. This powerful force clearly opens up options for the division, and provides some options for the capabilities otherwise absent in the modern division, such as division reconnaissance assets. Whether the modern division can use the reconnaissance assets of the combat aviation brigade as effectively as the World War II division used its reconnaissance units may depend on the organizational structure. In World War II, reconnaissance units worked directly for—and reported directly to—the division headquarters, while the modern aviation assets report to the combat aviation brigade. The modern system may be less responsive to the division's needs because its reconnaissance assets are commanded by a subordinate brigade with a host of other missions and priorities on the battlefield.

Overall, the differences in organization between the divisions of World War II and their modern counterparts reflect a shift of mission down one echelon with the modern division assuming a role similar to the corps of the older era and the modern BCT assuming the role to the older division. While the BCT maintains most of the capabilities of the older division, the modern division lacks many of the capabilities of the corps that it replaced, specifically a reconnaissance formation to provide targeting and observation for the field artillery and other fires assets supporting the division. Modern BCTs and divisions have a broader mission set than their

predecessors, and have more junior officers conducting the same jobs. A modern division trying to conduct combined arms maneuver warfare has to make do with a staff containing fewer and more junior maneuver and field artillery officers, than its predecessors, and it has to compete with a host of other mission sets.

Comparison of Division Training

The desire to rectify American army failures in the American Expeditionary Force during World War I, shaped American training in the interwar period. The officers who served in the American Expeditionary Force of World War I returned with a shared impression that they were unprepared for the tasks required to move, maintain, and employ large units—divisions, corps, and armies—on the battlefield.[73] Fort Leavenworth's General Staff College, later renamed the Command and General Staff College, became the one of the Army's primary tools for correcting this shortfall. The products of this program—including such names as Eisenhower, Patton, Bradley, Ridgway, and Gavin—became famous as they bounded across Europe, throwing divisions and corps forward with apparent ease.

The complexity of industrial-level warfare became apparent to American officers as they disembarked ships in France in 1916. Well-trained in tactics and leadership at the small-unit level, professional officers found themselves at a loss for how to organize reception staging and onward movement towards the front, to say nothing of integrating combined arms in combat. The French Army had learned their lesson a generation before in the Franco-Prussian War of 1870-1871, and had since developed a professional general staff system that was able to move, supply, and employ massive armies.[74] The French realized the complexity of the problem facing the Americans, and argued for the inclusion of American replacements into French divisions and

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[73] Schifferle, *America's School for War*, 13-14.

[74] Gat, *A History of Military Thought,* 385.

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corps rather than to have large American units floundering under inexperienced commanders and staffs.

General Pershing's famous insistence on American forces fighting together in World War I revolves around the problem of employing massive industrial-era armies. The eleven months between the first American forces landing in June 1917 and the first combat of an American division at Cantigny in May of 1918 and the first employment of an American Army at St. Mihiel in September 1918 were spent by Pershing frantically trying to train officers in General Staff techniques as used by the French, British, and Germans. A general staff school was set up in Langre, using instructors brought forward from the United States, and including French practices and lessons learned.[75] The efforts of the American army in France in 1918 eventually would generate a staff capacity adequate to employ American forces in combat, but the memory of the unpreparedness of the American army would remain. Many historians of the interwar period focus on the efforts of all the great powers to return mobility to warfare as the driving issue for military training organization and theory, within the American army this was paralleled with the effort to create a force capable of operating at division and higher levels.

Some of the staff from the Langre School returned to Leavenworth after World War I and began work in earnest to create a program that would create competent general staff officers. This was a classic instance of an identified capabilities gap identified, and then changes made to the program in order to meet the needs of the armed forces. The primary purpose of the general staff course during the interwar periods was specified as the training of officers to work on division staffs (first year), and corps and Army staffs (second year).

The curriculum used to train officers for working at these higher echelons went far deeper than just the theory and concepts behind the employment of large forces. Officers were trained to

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[75] Schifferle, *America's School for War*, 11-13; Daniel W. Johnson, "Focused vs. Broad in World War I: A Historical Comparison of General Staff Officer Education at Pre-war Leavenworth and Langres" (monograph, School of Advanced Military Studies, US Army CGSC, 2016), 29-34.

work within the different staff sections, and learned the procedures of a standardized system that operated together as one large machine. In *The Scientific Way of War,* Antoine Bousquet describes one view of military forces engaged in warfare as mechanistic—part of a giant clockwork.[76] This view of warfare, and the organizations partaking in warfare as a system of mechanical processes was an attractive concept for the Americans of the early twentieth century. Influenced by industrialization, Taylorism, and a view towards creating the greatest effectiveness and efficiency, the Army geared its training towards building individuals into parts that would fit interchangeably into its units which it saw as machines for conducting war.

Because staffing procedures were standardized with the curricula being taught to junior officers at the branch schools, the education program ensured that the guidance of officers working at higher echelons was immediately executable by staffs at subordinate units. The example of the employment of field artillery by US divisions is an illustrative example. Since artillery was oftentimes employed directly from division level to create effects on the battlefield this system was critical to the success of American divisions.

Learning from the French, who had developed the *poste central du groupe* during World War I to calculate and control the artillery fire of a battalion's batteries in a central headquarters, the American artillery developed the fire direction center.[77] The fire direction center relieved individual batteries of the need to calculate their own trajectories to reach targets, and referencing a chart marked with the location of all its subordinate artillery batteries, the fire direction center could mass the fire of all batteries within range of any target that it received. Under the leadership of the Deputy Commandant of the Field Artillery School, then Lt. Col. Leslie McNair, the fire direction center was taken beyond scope of the French *poste central du groupe* to allow American

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[76] Antoine Bousquet, *The Scientific Way of Warfare* (New York: Columbia University Press, 2009), 37-62.

[77] Bruce I. Gudmundsson, *On Artillery* (Westport, CT: Praeger, 1993), 109.

forces to not only mass all the batteries of a battalion, but to mass every gun from any American unit within range of a target.[78] To accomplish this, higher-echelon fire direction centers would distribute target information to all the subordinate fire direction centers with guns in range of the target, and lower echelon fire direction centers would share target information laterally and vertically up the fire support channel to allow the massing of all possible artillery on enemy targets.

While the World War II-era general staff course proved effective at training officers to work at the division and corps levels, the modern version of this course—CGSOC—no longer educates officers to work on a division or higher level staff. Since branch schools focus on brigade and lower echelons, this creates a gap in Army training. The only Army program currently focused on training operations at division level is the Mission Command Training Program (MCTP), which facilitates exercises for division headquarters. With no previous general staff training program in place, the massive digital war games coordinated by the MCTP become platforms for developing mundane staff procedures rather than rehearsing large-scale warfighting against a thinking opponent.

The modern CGSOC is built on a broad curriculum covering topics including ethics, civil-military relations, joint forces, and the contemporary operating environment.[79] These subjects are obviously of use to field grade officers as they progress through their careers, but this

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[78] Mark T. Calhoun, *Leslie McNair: Unsung Architect of the US Army* (Lawrence: University Press of Kansas, 2015), 135-39.

[79] CGSC Circular 350-1, *US Army Command and General Staff College Catalogue: Academic Year 2015-2016* (Fort Leavenworth, KS: US Army CGSC, 2015), Chapter 7. Modern CGSOC is broken into two phases: Common Core, and the Advanced Operations Course (AOC). The CGSOC common core courses are Foundations, Strategic Context of Operational Art, Unified Action, Joint Doctrine and Planning, Joint Application of Operational Art, Managing Army Change, Rise of the Western Way of War, Developing Organizations and Leaders, and Ethics. AOC, which is intended to prepare majors to serve on the staff of a headquarters conducting combat operations is composed of the following courses: CFLCC Operational Planning, Decisive Action–Division Operations, Decisive Action–Brigade Operations, Decisive Action–Unit Training Management, Military Innovation in Peace and War, Roots of Today's Operational Environment, Leadership Applied, Operational Contract Support, and Mission Command Information Systems.

curriculum lacks the subjects that were the original foundation of the course in the interwar period. Students no longer receive any block of training on division or corps operations in the common core curriculum, and the single block of instruction on division operations in the advanced operations course (designed for maneuver, fires and effects, and force sustainment officers who will serve on a battle staff) consists of a two-week block of lessons and an exercise.[80] Similarly, the tactics instruction that students receive is focused at the brigade-level and below, and is reinforced by multiple exercises where students practice planning as members of brigade or battalion staffs.[81]

This transition away from training field grade officers to serve on general staffs towards a broad-based curriculum was the product of analysis during the late 1990s that identified shortfalls to the officer education system. These shortfalls were highlighted by a needs analysis developed by Cubic Applications Inc. for CGSC in 2001, and in a report on officer education by the Army Training and Leader Development Panel (ATLDP) in 2003.[82] These two studies resulted in major changes to the CGSOC curriculum, which came into full effect with the implementation of "Intermediate Level Education" focused on building adaptive leaders who internalized a professional ethic and who were able to quickly form teams. The focus of this new curriculum would be to create field grade leaders who were able to adapt to any scenario they might face within the "Full Spectrum Battlespace" of the post-Cold War era.[83]

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[80] Ibid., 7-12. The 86 hours allotted to "Decisive Action–Division Operations" contains the following lessons in conjunction with an exercise: Division Doctrine Foundations, Close Air Support Integration and Execution, Tactical Sustainment, Plan Major Operations, Prepare Major Operations, and Execute Major Operations.

[81] Ibid. While on the surface it appears that division and brigade operations are given a similar amount of emphasis (86 hours for the Decisive Action – Division Operations versus 84 hours for the Decisive Action – Brigade Operations), analysis of the course material shows that the tactical supporting material for both of these courses is composed almost entirely at the brigade level.

[82] Cubic Applications Incorporated (CAI), *Intermediate Level Education Needs Analysis* (Leavenworth, KS: Cubic Applications, 2001); Army Training and Leader Development Panel (ATLDP), *Officer Study Report to the Army* (Fort Leavenworth, KS: ATLDP, 2003).

[83] CAI, *Intermediate Level Education Needs Analysis*, 1-4; ATLDP, *Officer Study Report*, OS-3.

The intent of the authors of the two studies was not to remove training on division-level operations from the curriculum of CGSOC, but that was the consequence of their methodology. Both studies validated the mission of CGSOC to teach officers division-level operations in order to fit within the overall officer education system which taught brigade and lower tactics to company grade officers at their officer basic and captains' career courses.[84] However, both studies argued for the primacy of concepts that would compete for time and resources with training on division-level operations and tactics. The ATLDP argued for a broad academic focus to create officers who could adapt to any situation encountered in full spectrum operations, and the Cubic study pointed out the high number of student hours dedicated to providing students information rather than teaching students to be learners with powers of analysis.[85]

The effects of both arguments resulted in the reduction and eventual near elimination of division-level training at CGSOC. The conversion from the legacy CGSOC to the ILE program starting in 2002 divided the course for field grade officers into "common core" and "advanced operations and warfighting course" (AOWC) blocks of instruction.[86] The common core contained no instruction on division-level operations, and the AOWC block covered division operations as just one topic among instruction on brigade operations, joint and interagency planning, leadership, and the contemporary operating environment.[87] By 2006, as the Army transformation to modularity was nearing completion, training on division operations amounted to only 112

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[84] CAI, *Intermediate Level Education Needs Analysis*, 15-1; ATLDP, *Officer Study Report*, OS-13.

[85] CAI, *Intermediate Level Education Needs Analysis*, 1-3; ATLDP, *Officer Study Report*, OS-13.

[86] CAI, *Intermediate Level Education Needs Analysis*, 15-1.

[87] Ibid.*,* Chapter 15.

hours (including one exercise) of the 948.5 hours of instruction provided to students.[88] By 2016, the number of hours of instruction on division operations had reduced to 96.[89]

The current educational system creates field grade officers who are adaptive, able to form teams quickly, and who internalize a professional military ethic. These are important characteristics in our officer corps, but they do not equate to knowing how to run a division. A construction crew filled with carpenters who bond well and understand what it means to live by "carpentry values" is useless unless at least some of those tradesmen know how to frame a house. Similarly, a division manned with officers who have never been trained to work on a division staff will grind to a halt no matter how adaptive the officers. An organization made up of between ten and twenty thousand soldiers is too complex of a machine to build on the fly.

The effect of this educational gap is crippling for Army field artillery forces at all echelons. Like other combat arms branches, the officer education system for field artillery officers teaches the tactics of employing its weapon systems as a part of brigade and lower echelons at the officer basic and captains career courses. Unlike the maneuver branches, however, the lack of training for higher echelon warfighting directly degrades—or stops entirely—the ability of field artillery to engage targets. For direct support field artillery battalions in BCTs, the lack of coordination at division level prevents the massing of fires from multiple BCT field artillery battalions. For general support field artillery battalions working in a FAB or DIVARTY, the lack of division proficiency can shut down their firing completely.

The primary program that the Army currently employs to educate personnel to work at division and higher levels is the MCTP out of Fort Leavenworth. MCTP facilitates massive wargames, called "Warfighter Exercises," where division and higher staffs can practice fighting against a thinking competitor in a simulation of combat on a scale similar to that faced by the

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[88] US Army CGSC, "AY06/07 CC and AOWC Horse Blankets," Excel documents, 2006, author's collection.

[89] CGSC Circular 350-1, 7-12.

divisions of World War II. During the exercises, which divisions undergo once every two years, division headquarters physically occupy a tactical training area while their subordinate units are usually located in a simulation center, carrying out the division's orders in a networked computer game and providing reports back to the division headquarters as though they were physically on the battlefield engaging the enemy. The simulation center also provides feedback to the division's digital command systems, so that the location of vehicles and units are displayed in the division headquarters as they are moved in the simulation, and the division's intelligence collection assets receive reports of enemy activity based on the enemy's actions in the simulation.[90]

The warfighter exercise is a major undertaking, involving thousands of personnel in order to provide a realistic training experience for division commanders and staffs, but this opportunity is largely wasted. Because the warfighter exercise is the only program training individuals and staffs to operate as large units in a mobile battlefield, most of the effort spent during both the train-up and during the exercise itself is on establishing basic staffing procedures within the division. As reflected in the reported "trends" from MCTP about the warfighter exercises, divisions struggle to establish the basic mechanisms of tracking the status of their own subordinate units or of managing the staff battle rhythm within their command posts.[91] Rather than using the training event to practice reacting to and defeating the enemy, units default to spending their energy trying to design the machine that they should be employing against the enemy.

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[90] This explanation of warfighter exercises is based on the author's experience as an MCTP observer-coach/trainer from 2015-2016.

[91] Edward Bohnemann, *MCTP FY15 Key Observations: Decisive Action Exercises* (Fort Leavenworth, KS: MCTP, 2016), 1-4; Michael Konczey, "MCTP Operations Group Alpha Chief of Group Trends," PowerPoint presentation, January 2015, author's collection, slide 1. The introductory page by Colonel Bohnemann lists the major challenges as defining the corps versus division versus brigade fights, understanding and correctly applying operational frameworks, and using processes and procedures to support the commander's decision making. The Operations Group Alpha trends are focused specifically on division and corps headquarters. Both documents contain few references to the effectiveness of the division in combat against the enemy, but are composed almost exclusively of internal staff coordination.

The practice of using the warfighter exercise program as a basic staff training event has become so ingrained that even within the MCTP, almost all of the feedback provided is on the subject of staff procedures. The only portion of the MCTP "Trends" that mentions the effect of the division operations on the enemy are the trends related to targeting and fires. In this case there is a clear connection between disconnected staff procedures and negative battlefield performance because without a smoothly functioning organization, targeting fails to "synchronize" the division's effort resulting in field artillery and joint fires not engaging and destroying enemy forces.[92] To actually target and strike an enemy with division-level field artillery assets requires that a sensor is in the right place at the right time to locate an enemy somewhere on the battlefield at the same time that a field artillery unit is in range of the enemy, with the proper ammunition uploaded, and is ready to fire. This complexity is magnified in large-scale maneuver warfare because the target synchronization process is not a single discrete event happening in a vacuum, but rather is happening simultaneously with dozens or even hundreds of other targets. One Gray Eagle drone flying over the battlefield may be searching for a dozen different targets at the same time, while a single multiple launch rocket system (MLRS) field artillery battalion is engaging ten different targets throughout the entire joint operations area (JOA).

The past four years of warfighter exercises have shown that this level of complex coordination between multiple elements of the division cannot be taught and trained "on the fly" as division staffs conduct a warfighter exercise, at least not to an effective level of proficiency. Because of the lack of any other training programs, MCTP is forced to focus on basic staff procedures during both the train-up and the conduct of warfighter exercises. The more complex aspects of fighting a division—such as targeting to engage the enemy with field artillery—are either executed poorly, or not at all. This is a far cry from World War II when divisions received

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[92] Bohnemann, *MCTP FY15 Key Observations,* 38-41; Konczey, "MCTP Operations Group Alpha Chief of Group Trends," slides 28-35. The best example of this is the first fires trend from Operations Group Alpha, titled, "Division joint fires do not effectively shape the division's deep fight."

personnel who were already trained to operate in the machinery of the general staff, allowing American division-level leaders to spend their time looking for ways to defeat the enemy instead of trying to figure out how to operate their own organization.

To recap this section on the comparison of the training given to personnel working on a division staff, the evidence shows that in the World War II era, the Army used the CGSC at Fort Leavenworth primarily as a training program to create general staff officers to work on division staffs, but that the modern Army does not train officers to work on division staffs in any school. The modern mission command training program provides some level of training for division staffs, but defaults to basic staff functions because personnel have no prior training. If the division is a giant machine, the modern Army has no program to make craft the individual parts of the machine (personnel on a division staff) to fit within the larger structure.

Conclusion and Recommendations

The US Army divisions of World War II represented a culmination of American mass production and efficiency. The division was the machine of war, designed by American planners to destroy enemy forces and win wars. The machine was designed to maximize the technical capabilities of the weaponry available. For the human elements of the machine—the commanders and staffs—the Army provided detailed instructions for how a division operated, and then trained them in a school where they would practice operating the machine in all kinds of scenarios against thinking opponents.

The modern division, while it is the descendant of the World War II divisions by lineage, does not fill the same role as its predecessors. With the Army's transformation to a brigade combat team-based force, the warfighting responsibilities of the division passed down the chain to the brigade combat team. Retaining the name "division," and many of the concepts that accompany that, but left without an organizational structure or training system that allows it to perform either the role it once had as a tactical headquarters, or to ascend to the position that the

corps held previously. The current US Army division exists as a piecemeal organization, lacking a clear concept of its purpose, and manned with personnel and subordinate organizations that struggle to find their place in the organization—if the division were a machine, then currently it would be a broken one.

Comparing the modern Army division and comparing it to a previously successful model, it is apparent that the current organization is composed of several elements that do not fit together. Rather than a machine engineered to accomplish a specific task, the modern version seems more like a Frankenstein monster cobbled out of the pieces found lying around the Army after the transition to a BCT-based force. The discrepancies with the design of the division fall into two categories, the first dealing with the concept of the role of the division on the modern battlefield, and the second concerning the design of the components and systems of the division so that the machine can actually function.

The modern division has to split its focus between the various roles of serving as a JTF, JFLCC, ARFOR, and as a tactical headquarters. This leads to a loss of focus, and integrating combined arms to defeat an enemy force becomes a side-show to other staff actions. The Army could take a page from the other services and follow the Goldwater-Nichols Act guidance on how to create the various joint headquarters. Rather than playing at being half-way organized as a JTF or JFLCC at all times, the Army could focus on its primary role as a tactical division headquarters and then fill the JTF roles according to a joint manning document as they arise. These JTF-level roles do not require the same machine-level precision, speed, and responsiveness as the tactical role assigned to the division in a major conflict. Focusing on the tactical role of the division could also carry over to the organization of the division staff. Special staff enablers such as civil affairs could be removed from the division staff to allow the staff to focus on building teams and systems around the tactical tasks of combined arms maneuver. If needed in an actual operation, these enablers could be added to the division at that point since while they need to be integrated,

their integration is not as immediate or fluid as the integration of maneuver and fires in the face of a dangerous enemy. Enablers could be integrated into a team that already knows how to do its core mission. The current alternative is a division staff that is focused on nothing at all, attempting to integrate enablers into operations with no clear distinction among priorities.

Where do information operations, civil affairs, or knowledge management stack in level of priority next to providing responsive fire support to troops in a firefight against an organized enemy force maneuvering aggressively to destroy them? The stock answer seems to be that those enablers are 'critical', and examples are made about how a unit skipping out on information operations might miss larger strategic messaging objectives that would invalidate any tactical gains. This stock answer is common enough, but it is trite. The possibility of a larger "what if" does not outweigh the consequences of not bringing effective physical combat power to bear in support of those troops in contact who will die if not supported. What are the consequences to information operations if an American infantry company is overrun and their bodies are drug through the streets of a city on international news? How effective is a civil affairs effort in a region where an enemy army has expelled all Americans? An effective knowledge management program is useless to a division headquarters that has been overrun by an enemy armored battalion. All of these programs are important, but they depend on the tactical success of combat with combined arms. Someone has to actually do the fighting, and the division should have this tactical role down pat—which it currently does not.

Before discussing options to improve the design or the functioning of the division in a tactical role, one should first address the question of what that role is. The previous analysis argued that with the adoption of the BCT as the basic element of combat power within the Army, it assumed the role that the division previously held of closing with and destroying the enemy, while the division assumed the role previously held by the corps of shaping the deep fight and providing supporting enablers to weight the main effort. Any changes to Army doctrine,

organization, or training aimed at improving the ability of the modern division to perform tactically should work toward this conceptual ideal.

Doctrinally, it would be relatively easy for the Army to address conceptual issues for the employment of the division. Much of FM 3-94 and ATP 3-91 already assumes that the division is operating on the concept of a headquarters that shapes the enemy operationally and enables the BCT to engage with and destroy the enemy. The problem is that in addition to this broader focus, these manuals also include several references to the division maneuvering around the battlefield like a much smaller organization, such as FM 3-94's example of the division movement to contact shown in the previous section. Removing portions of these manuals that indicate that the division is a force that primarily maneuvers to engage and destroy the enemy (the role of the current BCT) would prevent confusion on staffs, and would help shape efforts to improve the organization and training of divisions.

Organizationally, the Army should design the division structure around the roles that were appropriate for the corps-level of old, which were shaping operations in the deep fight, and logistics and support to the engaged maneuver forces. These functions are what the machine should be designed to do, and the pieces of the machine should be built to fit. To shape the deep fight, the division needs reconnaissance and observation assets that work specifically to find targets for division level fires assets. Given the smaller amount of field artillery assets available across the division, it would also be beneficial to create a system where all of the direct support artillery battalions habitually reinforce each other so as to mass artillery in support of whichever BCT is in contact with the enemy. This could be accomplished by moving the artillery battalions from the BCTs to the newly formed DIVARTYs, and then assigning the battalions direct support relationships back to the BCTs. This would preserve the responsiveness of fires within the BCT, while also allowing the division to weight the main effort with fires through the DIVARTY by assigning field artillery battalions supporting BCTs not currently engaged with the enemy to

provide reinforcing fires to those that are. This would move the final control of artillery systems that can affect the entire division battlespace to a headquarters with a perspective that covers the same amount of real estate.

In the realm of training, the focus of the Command and General Staff College has shifted its focus from division to BCT-level operations. Given the conceptual shift of operations downward one echelon from division to BCT, this may be an acceptable outcome for the Army overall. However it does not eliminate the gap in Army training. Whatever the role is of the division, the Army lacks a system to train personnel to work there. The MCTP warfighter program is a major undertaking, but is not designed to handle individual-level training, and their collective efforts are largely wasted because that is what they are forced to do. An actual general staff school that developed, standardized, and taught "general staff procedures" would prepare individuals for working on a division staff. The modern Army could take the example of the Leavenworth school in the interwar period, or for a more modern approach the Army could model training on the Air Force system for training personnel to work in an air operations center. Air Force personnel assigned to work in an air operations center are first sent to a course (the joint air operations command and control course), and are certified to work within the air operations center. A similar program, teaching Army personnel how to function on a division staff would be relatively inexpensive compared to sending students to the year-long CGSC course (the Air Force Joint Air Operations Command and Control Course is only four weeks long), but it would first require the Army to establish specifically what a division is supposed to do, and standard procedures for doing it.

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